repeat procedure rates (TLR - target lesion revascularization) over 1 year. The model was developed from a Italian national health care system (NHS) perspective with a 5-year time horizon. A systematic literature review was carried out on TLR rates in patients with femoral-popliteal disease treated with one of the four treatment choices. Costs associated to each treatment are derived from the average DRG tariffs used for peripheral angioplasty procedures. A decision analytic model was developed to estimate total costs over 12 months of index procedures and possible revascularizations. **RESULTS:** Pooled 12-month TLR rates show clear patients benefit with DEB compared to PTA (8,6% vs 28,6%) and non-inferiority of DEB vs DES (9,4%) and BMS (11,5%). Total Italian DRG payments for index and repeat interventions (based on TLR rates estimation) across treatments showed that DEB was the least costly treatment strategy over 1 year, with saving of almost €1,000 per patient with DEB vs PTA. Based on these per-patient savings, the potential total savings amounted to approximately €2 million for an assumed annual increase of 5% in DEB adoption rate over 5 years. **CONCLUSIONS:** The analysis suggests clear patient benefit for DEB. Despite initial higher investments, DEB represents a cost-saving alternative to other technologies according to the NHS perspective.

PCV41

BUDGET IMPACT ANALYSIS OF RIVAROXABAN IN THE PREVENTION OF STROKE IN NON-VALVULAR ATRIAL FIBRILLATION PATIENTS IN ITALY

Capri S[1], Veneziano M[2], Ricciardi WG[3], D'Ausilio A[4], Pedone MP[5], Bianchi C[5]
[1]*Institute of Economics, Castellanza, Italy,* [2]*Catholic University of Sacred Heart, Roma, Italy,* [3]*Catholic University of Sacred Heart, Rome, Italy,* [4]*Creativ Ceutical, Luxembourg, Luxembourg,* [5]*Bayer Pharma, Milano, Italy*

OBJECTIVES: In Italy about 500,000 non-valvular atrial fibrillation (NVAF) patients have a major unmet medical need as they do not receive adequate anticoagulation therapy for stroke prophylaxis: many patients receive antiplatelet therapy, even when the guidelines recommend vitamin-K antagonists (VKA), or are not treated at all or have international normalized ratio inadequate control despite treatment with VKA. The purpose of this study was to perform a budget impact analysis of rivaroxaban - a novel oral anticoagulant (NOAC) - in NVAF patients with the highest unmet medical need from the Italian health care system (SSN) perspective. **METHODS:** Two scenarios were compared within a three-year timeframe: the actual scenario, where patients are treated according to current clinical practice (46% with VKA, 38% with antiplatelets, 17% non-treated) and a scenario where Rivaroxaban is present with increasing market shares. The event risks (ischemic and haemorrhagic stroke, systemic embolism, myocardial infarction and bleedings) were retrieved from the ROCKET-AF trial or from a network meta-analysis. Resource consumption was computed using mean regional tariffs. Since Rivaroxaban price is not officially published, the daily cost used ranges from €2.10 (price of the first NOAC approved in this indication in Italy) and the lowest Rivaroxaban price available in Europe (€1.94). The results of the analysis are displayed as a total costs difference between the two scenarios. **RESULTS:** A reduction in the total number of events and costs at SSN charge is shown since the first year from rivaroxaban introduction. The increase in pharmaceutical expenditure is offset by savings from a lower number of events to treat and absence of routine coagulation monitoring. **CONCLUSIONS:** The introduction of rivaroxaban in the national scenario is beneficial because it will provide a substantial reduction in the disease burden for patients and in costs for the SSN.

PCV42

COMPARISON OF DABIGATRAN ETEXILATE VERSUS WARFARIN, ASPRIN & NO TREATMENT FOR STROKE PREVENTION IN ATRIAL FIBRILLATION IN ENGLAND, UNITED KINGDOM, OVER 5 YEARS

Sunderland TJ[1], Zah V[2], McCarron C[1]
[1]*Boehringer Ingelheim, Berkshire, UK,* [2]*ZRx Outcomes Research Inc., Mississauga, ON, Canada*

OBJECTIVES: To estimate the number of clinical events and costs of these events for dabigatran etexilate (dabigatran) versus a combination of warfarin, aspirin and no treatment for stroke prevention in atrial fibrillation (AF) patients in an England, UK, setting over 5 years. **METHODS:** An interactive model was built in Microsoft Excel to calculate the following: • Total number of AF patients eligible for dabigatran • Number of clinical events for dabigatran, warfarin, aspirin and no treatment patients over a 5 year time horizon. Clinical events included were stroke (ischaemic, haemorrhagic, systemic embolism); major bleeding (intracranial and extracranial); all cause mortality; acute myocardial infarction • Total costs of clinical events for each treatment. The total cost per day for dabigatran is £2.20 per day; warfarin is £1.18; aspirin is £0.09; no treatment is £0.00. Warfarin had a TTR of 55% (from Jones et al 2005); aspirin and no treatment clinical event rates were from Roskell et al (2010). Dabigatran data was from the RE-LY trial **RESULTS:** The model estimates there are 822,527 patients with AF in England, of which 78% are eligible for dabigatran (641,571). After 5 years, patients treated with dabigatran versus 80% with warfarin; 10% aspirin; 10% no treatment are associated with: 1) 27,357 fewer strokes (16,938 fewer ischaemic storkes); 2) 14,413 fewer major bleeding events; and 3) An increase of £268,167,861 in drug budget; however there is an overall cost saving of £11,240,201. The overall cost saving is predominantly driven by savings in disability following stroke. **CONCLUSIONS:** Study indicates that due to a superior clinical profile, dabigatran may more than offset the increase drug budgets, resulting in cost savings, if used preferentially versus warfarin, aspirin or no treatment.

PCV43

COMPARISON OF DABIGATRAN ETEXILATE VERSUS WARFARIN FOR STROKE PREVENTION IN ATRIAL FIBRILLATION IN IRELAND OVER 5 YEARS

McCarron C[1], Sunderland TJ[1], Zah V[2]
[1]*Boehringer Ingelheim, Berkshire, UK,* [2]*ZRx Outcomes Research Inc., Mississauga, ON, Canada*

OBJECTIVES: To estimate numbers of clinical events (strokes, major bleeds, acute myocardial infarctions and deaths) and health care costs over a five year period in Ireland following a switch of antithrombotic therapy for atrial fibrillation (AF) from warfarin to dabigatran. **METHODS:** A model was built in Microsoft Excel and included an estimate of the number of Irish patients diagnosed with AF and eligible for treatment with dabigatran. It is assumed that all diagnosed AF patients eligible for oral anticoagulation currently receive warfarin and that all patients switch to dabigatran in Year 1, regardless of International Normalised Ratio (INR) control amongst warfarin patients. Differences in numbers of clinical events expected to occur based on a patient's antithrombotic treatment were estimated by applying event rates from literature sources. Costs were estimated from a HSE perspective and included costs of clinical events, disability costs and medication costs. **RESULTS:** A total of 28,332 Irish patients are estimated to have been diagnosed with AF and are eligible for dabigatran. Switching these patients from warfarin to dabigatran may avoid: 657 strokes; 792 major bleeds; 1,437 deaths. By Year 5, cumulative dabigatran drug costs were estimated at €7,670,870. Cost savings due to clinical events avoided amounted to €2,894,743 and savings on disability costs at €5,563,349, giving a total cost saving with dabigatran of €787,223. **CONCLUSIONS:** Use of dabigatran as compared to warfarin for stroke prevention in AF in the Irish setting may avoid a significant number of clinical events and result in overall cost savings.

PCV44

ECONOMIC BURDEN OF VENOUS THROMBOEMOBLISM ACROSS PATIENT POPULATIONS: A LITERATURE REVIEW

Claflin AB[1], Mitchell CR[2], Liu X[1], Phatak H[3], Mitchell SA[2]
[1]*Pfizer, Inc., New York, NY, USA,* [2]*Abacus International, Bicester, UK,* [3]*Bristol-Myers Squibb Company, Princeton, NJ, USA*

OBJECTIVES: To conduct a literature review on the economic burden of venous thromboembolism (VTE) (encompassing deep vein thrombosis (DVT) and pulmonary embolism (PE)) and related complications. **METHODS:** Eligible English-language studies published post-1990 were identified from electronic databases (Medline, EMBASE and Cochrane Library: accessed December 2012) and conference proceedings with no restriction on geographical location or patient population. All costs are reported in US$ adjusted to 2013 levels. **RESULTS:** Twenty-nine studies met eligibility criteria: United States (n=17), Canada (n=2), Australia (n=1), South America (n=1) and Europe (n=8). The estimated annual cost of VTE treatment is in excess of $2 billion in the USA and Europe and $153 million in Australia. This figure rises to $15.6–$34.8 billion in the US and to $1.78 billion in Australia on inclusion of complications, productivity loss and other societal costs. The cost of treating PE per patient ($12,567-$20,488) is higher than that of treating DVT ($2,912-$13,299). Hospitalisation is the main cost driver for VTE treatment, accounting for 56%-89% of all treatment costs. For patients with cancer, costs were 30-50% higher for those with VTE compared with those without VTE. VTE-related complications incur additional costs including: bleeding (up to $23,963 per patient with a major bleed); recurrent VTE (up to $18,122 per patient); post-thrombotic syndrome (increase of up to 75% in treatment cost); chronic thromboembolic pulmonary hypertension (up to $6,708 per patient); and heparin-induced thrombocytopenia (up to $18,779 per patient). **CONCLUSIONS:** Incident VTE events and related complications are associated with significant economic burden across several patient populations. Treating PE may cost up to five times more than treating DVT, with hospitalisation reported as the major cost driver of VTE treatment. Effective and convenient therapies associated with both a reduced incidence of bleeding and complications are required to further reduce the cost burden associated with VTE.

PCV45

PHARMACOECONOMIC ASPECTS OF ACTOVEGIN AND SOLCOSERYL IN THE TREATMENT OF RUSSIAN PATIENTS WITH ACUTE CEREBROVASCULAR ACCIDENTS

Ryazhenov VV[1], Gorokhova SG[1], Emchenko IV[1], Matveev NV[2]
[1]*I.M. Sechenov First Moscow State Medical University, Moscow, Russia,* [2]*N.I. Pirogov Russian National Research Medical University, Moscow, Russia*

OBJECTIVES: To assess the cost-effectiveness of actovegin and solcoseryl in the treatment of Russian patients with acute ischemic stroke and predict potential budget impact of the implementation of actovegin in routine clinical practice. **METHODS:** The pharmacoeconomic model was developed based on the data from Russian clinical trial performed by A. Fedin et al. (2000). Two groups of patients (100 persons each) hospitalized with acute ischemic stroke were included in the model. The first group of patients received conventional therapy + actovegin and the second group received conventional therapy + solcoseryl. Based on the reported by A. Fedin et al. time-dependent mortality reduction in actovegin-treated patients (mortality rate was 7% in patients started actovegin within the first 6 hours after stroke onset, 10% – in those started actovegin within the first 24 hours, 14% – in those started actovegin after more than 24 hours, and it was much higher in the control group – 21%) cost-effectiveness ratios (CERs) and indicator of economic rationality of costs of previous periods (IRPP) were calculated and compared. **RESULTS:** Estimated CERs varied from 46,348.82 to 50,121.40 RUB per one survivor in the actovegin group and from 50,900.56 to 53,585.17 RUB per one survivor in the solcoseryl group. Inefficient expenditures (IRPP) varied from 301,730.83 RUB to 603,461.67 RUB in the actovegin group, and were 873,453.57 RUB in the solcoseryl group. **CONCLUSIONS:** The study has demonstrated the preferred cost-effectiveness profile of actovegin as compared to solcoseryl in patients with acute ischemic stroke.

PCV46

PHARMACOECONOMIC BENEFITS OF CITICOLINE IN THE TREATMENT OF ACUTE ISCHEMIC STROKE IN RUSSIA

Ryazhenov VV, Gorokhova SG
I.M. Sechenov First Moscow State Medical University, Moscow, Russia

OBJECTIVES: To assess the cost-effectiveness of citicoline in the treatment of Russian patients with acute ischemic stroke and identify potential budget impact of the implementation of citicoline in routine clinical practice. **METHODS:** The pharmacoeconomic model was developed based on the data of meta-analysis performed by A. Davalos et al. (2002). Two groups of 100 patients each were included in the model: the first group of patients received conventional therapy and the second group (active treatment group) additionally received citicoline. It was assumed that citicoline was given to patients in the active treatment group in the following way: during the first

10 days since acute stroke onset, 2,000 mg was administered intravenously; from day 11 to the end of the treatment periods (74 days), 1,000 mg was administered per os. The time horizon adopted in the model was 12 weeks. Based on the data on effectiveness of citicoline in complete patient recovery after 3 months reported by A. Davalos et al., the cost-effectiveness ratios (CERs) were calculated and compared. **RESULTS:** Estimated CERs were 513,099.20 RUB per one patient recovered in control group and 435,368.00 RUB per one patient recovered in citicoline group. Furthermore, the costs of rehabilitation of patients were lower in the citicoline group as compared to control group, cost savings were estimated to be about 1,719,610.00 RUB. **CONCLUSIONS:** The study has demonstrated that the treatment of acute ischemic stroke with citicoline was more cost-effective and had the potential to reduce the rehabilitation expenses.

PCV48

REMOTE PATIENT MONITORING IN CRT-D RECIPIENTS MAY REDUCE USE OF HOSPITAL-BASED CARE

Stern S[1], Kansal AR[1], Amorosi SL[2], de Lissovoy G[3]
[1]*Evidera, Bethesda, MD, USA,* [2]*Boston Scientific, Natick, MA, USA,* [3]*Johns Hopkins University, Baltimore, MD, USA*

OBJECTIVES: Heart failure (HF) is a costly disease imposing a substantial health burden which affects 1-2% of Europeans. Hospital readmission for HF is a common occurrence with 25% of all patients readmitted within 30-days following initial hospitalization. Reducing readmission is an important component of managing HF costs and increasingly being targeted with health care policy reforms. The objective of this study is to examine how remote patient monitoring (RPM) may affect health care costs following the placement of a CRT-D device for patients with HF through the use of a simulation model. **METHODS:** The analysis was an individual patient event-based simulation from a US payer perspective based on a sample of patients from RAPID-RF, a multi-center prospective single-arm registry which enrolled 889 patients who received a CRT-D and RPM system (LATITUDE® Boston Scientific). The modeled population consisted of patients that had at least one alert for weight change, atrial tachycardia or ICD shock with a subsequent intervention (N=128). The population was limited to this subset to focus on the costs of changes in management due to RPM. A non-RPM control group was created by cloning each trial patient and simulating their response in the absence of RPM to the conditions that triggered each alert in the trial over one year using a decision tree which computed rates of hospitalization and physician contacts based on literature data. Event and hospitalization costs were estimated per Medicare (CMS) national average payment. **RESULTS:** RPM reduced total costs after the index procedure by $323/patient driven by a reduction in costs related to hospitalization admissions. The decrease in hospital admission cost was partially offset by RPM's increase in physician visits and telephone counseling. **CONCLUSIONS:** RPM has the potential to shift HF-related care from an inpatient setting to office-based care, resulting in cost savings to national payers.

PCV49

DABIGATRAN ETEXILATE IN PREVENTION OF STROKE FOR NONVALVULAR ATRIAL FIBRILLATION PATIENTS IN TURKISH HEALTH CARE SETTING; A STUDY ON COST CONTAINMENT OF SOCIAL SECURITY INSTITUTION (SSI)

Kececioglu S[1], Ulus P[2], Cukadar F[3], Ozkan M[3], Urganci B[3]
[1]*Boehringer Ingelheim Turkey, Istanbul, Turkey,* [2]*Boehringer Ingelheim Turkey, ISTANBUL, TURKEY, Turkey,* [3]*Boehringer Ingelheim Turkey, ISTANBUL, Turkey*

OBJECTIVES: Analysis of cost containment of SSI via use of Dabigatran Etexilate (150MG) versus current standard of care (Warfarin) in prevention of stroke for non valvular atrial fibrillation patients in Turkish health care setting. **METHODS:** All calculations are performed for a group of 1000 patients in each treatment arm per year (Treatment arms; Dabigatran 150MG & Warfarin 5MG – results are represented as "cost per patient per day"). Available clinical data is analyzed for calculation of event costs in each treatment arm (RE-LY study). Local costs of events are included from local literature. Microsoft Excel (2007) is used for calculations and construction of data tables. **RESULTS:** Direct cost of SSI (indirect costs are not included in this analysis) is calculated in each treatment arm. Difference of daily medication cost between Dabigatran Etexilate and Warfarin treatments is +3.12 TL/Day*Patient however, this difference is calculated as -3.34 TL/Day*Patient when medication cost is combined with total treatment cost (costs of thromboembolic&adverse events, INR monitoring, impairment). Dabigatran Etexilate offers a cost containment (saving) of 0.22 TL/Day*Patient in prevention of stroke for non valvular atrial fibrillation patients in Turkish health care setting. **CONCLUSIONS:** Limitation of this study is covering only direct cost data due to lack of local literature on indirect costs. Further analysis may be performed by non-interventional studies, which will define cost containment data via real life cost and effectiveness values. This study demonstrates that Dabigatran Etexilate treatment may sustain cost containment (saving) via reduction of direct cost of SSI with respect to current standard of care, in prevention of stroke in patients with atrial fibrillation in current Turkish health care system.

PCV50

COST SAVING AFTER SUTURELESS REPLACEMENT IN AORTIC VALVE STENOSIS: RESULTS FROM A PROPENSITY-MATCHED SCORE ANALYSIS IN GERMANY

Santarpino G[1], Giardina S[2], Pollari F[1], Vogt F[1], Pfeiffer S[1], Fischlein T[1]
[1]*Klinikum Nurnberg, Nurnberg, Germany,* [2]*Sorin Group, Milano, Italy*

OBJECTIVES: New sutureless aortic valve prostheses reduce the surgical time. Objective of this study is to asses if shorter operative times may also result in improved patient outcomes and the impact on the hospital costs. **METHODS:** Records of 547 patients that underwent aortic valve replacement with a bioprosthesis from March 2009 and May 2013 were identified. Based on a propensity score analysis 2 groups (Sutureless and Sutured) with 82 matched pairs were created from the 112 patients received a Perceval sutureless bioprosthesis and the 435 patients received a sutured valve. Hospital and follow up outcomes, resources consumption was recorded and compared between groups. Analysis was performed according the National Health Care system perspective. **RESULTS:** Preoperative characteristics and risk scores of the 2 groups were comparable. Hospital mortality was 3.7% in Sutured and 2.4% in Sutureless (p=0.65). Aortic cross-clamp, cardiopulmonary bypass time and operation time were 20%, 23% and 16% shorter in Sutureless (each one p<0.001).Sutureless required less blood transfusion (1.2±1.3 vs 2.5±3.7 units, p=0.005) with a similar incidence of postoperative bleeding (2 patients vs 5, p=0.221). Sutureless had a shorter intensive care unit stay (2.0±1.72vs 2.8±1.3 days, p<0.001), a shorter hospital stay (11.4±3.9 vs 17.3±13.7 days, p<0.001) and a shorter intubation time (9.5±4.6 vs 16.6±6.4 hours, p<0.001). A neurological event was recorded in 3 sutureless patients and in 6 sutures (p=0.248). Sutured has an higher incidence of postoperative atrial fibrillation, pleura effusions and respiratory insufficiency (p 0.015, 0.024 and 0.016, respectively). Reduced risk of post operative complication resulted in a dramatic reduction of resources consumption in the sutureless group allowing a saving of 50% of the complication related resource use. **CONCLUSIONS:** Shorter procedural times resulting from sutureless aortic valve replacement are associated with better outcomes and lower costs. Sutureless valve may be considered as the first-line treatment for patients underwent aortic valve replacement with a bioprosthesis.

PCV51

TRENDS IN THE COST-EFFECTIVENESS OF STROKE CARE

Urbina-Valdespino E[1], Saka Ö[1], Crichton S[2], Rudd A[2], Mcguire A[3], Wolfe C[2]
[1]*Deloitte, Diegem, Belgium,* [2]*King's College London, London, UK,* [3]*London School of Economics, London, UK*

OBJECTIVES: To assess the annual average costs and quality adjusted life years (QALYs) of stroke services in the UK before and after the introduction of the National Stroke Strategy (period: 2006-2011). **METHODS:** Data from the South London Stroke Register (SLSR) from 2006 to 2011 were used to populate a discrete event simulation (DES) model. Parameters, such as daily probability of survival and length of stay, included in the model were calculated by using Cox proportional hazard model and multivariate regression methods respectively. Barthel Index was used as proxy for measures of quality of life. Treatment costs were introduced in the model in order to calculate the total costs based on resource usage. The model simulated the stroke care delivery from stroke onset with 10-year follow up. Average cost and QALYs were calculated for every year from 2006 to 2011. **RESULTS:** The average total costs per treating a stroke patient decreased from £30,745 to £27,086 between 2006 and 2011 (p-value for trend < 0.001). This is mainly as a result of savings achieved in the inpatient phase due to a shorter LOS and a higher proportion of patients with mild disability. Per patient QALY's also increased from 2.2 to 3.1 during the same period (p-value for trend < 0.001), this is due to a higher proportion of patients having access to better organised stroke care. **CONCLUSIONS:** This study has demonstrated that stroke services in the UK have improved their value for money over time with constant gains in efficiency. The use of DES together with SLSR data allows the testing of the costs and outcomes of a whole stroke provision system or components of it and provide opportunities for retrospective (as done in this study) as well as prospective analysis (in the case of health technology assessment studies).

PCV52

DISCRETE EVENT SIMULATION MODEL OF PRIMARY PREVENTION OF STROKE: BENEFITS OF INCREASING COVERAGE TO UNSERVED PATIENTS

Urbina-Valdespino E[1], Saka Ö[1], Kleintjens J[1], Rudd A[2], Wolfe C[2]
[1]*Deloitte, Diegem, Belgium,* [2]*King's College London, London, UK*

OBJECTIVES: To assess the impact of a hypothetical increase in the stroke primary preventive care coverage in the UK. Productivity gains, using resource utilization as proxy, and monetary benefits were calculated. **METHODS:** Data from the South London Stroke Register (SLSR) from 2009 to 2011 were used to create a hypothetical cohort to populate a discrete event simulation (DES) model. The model simulated the stroke care delivery from primary preventive stroke care until discharge from stroke unit or general medical ward. Primary preventive care was defined as taking medications to control hypertension, high-cholesterol and also anticoagulants in patients with atrial fibrillation in order to prevent strokes. Treatment costs were introduced in the model in order to calculate the total costs based on resource usage. Hypothetical scenarios consisting in 10% incremental increase of primary preventive care for high-risk factors were tested. The reduction of strokes was given by relative risk reduction ratios extracted from clinical trials. **RESULTS:** Our findings indicate that for every 10% increase in the number of patients undergoing primary prevention treatment the number of strokes would be reduced by 1.2%. In a scenario where 50% of the untreated patients receive primary prevention 7,232 strokes would be reduced per year. For the same scenario, 47 hyper acute beds, 359 acute beds and 47 general medical ward beds could be saved in average. In total this would yield in £42.2 million of savings in the inpatient phase of stroke care. **CONCLUSIONS:** Our findings suggest that by enhancing primary prevention of stroke care in the UK, significant benefits can be achieved in terms of reductions in resource consumption and monetary savings as a result of averted strokes. The generation and analysis of these retrospective hypothetical scenarios, using real-world evidence on stroke, help evaluate policy choices in stroke care in the UK.

PCV53

THE BURDEN OF RESISTANT HYPERTENSION IN 5 EUROPEAN COUNTRIES

Sapoval M[1], Hale BC[2], Armstrong S[3], Da Deppo L[4], Hertz D[3], Briggs A[5]
[1]*Interventional Radiology Department, Assistance Publique des Hôpitaux de Paris, Georges Pompidou European Hospital, Paris, France,* [2]*Boston Scientific, Natick, MA, USA,* [3]*GfK Bridgehead, Wayland, MA, USA,* [4]*Boston Scientific, Milan, Italy,* [5]*University of Glasgow, Glasgow, UK*

OBJECTIVES: Greater than 40% of Europeans over age 25 have hypertension, and 10% of those have medication resistant hypertension (RHT). In EU5 (France, Germany, Italy, Spain, UK) that results in 9.4 million persons with blood pressure above goal, despite treatment with 3+ medications. These patients have a greater than 30% risk of cardiovascular disease (CVD) over 10 years and an increased risk of end-stage renal disease (ESRD). This analysis sought to quantify the burden of RHT